REMARKS

A typographical error is corrected by the amendment to Claim 13.
The invention is directed to a process for **improving** the **impact performance** of a thermoplastic molding composition. The process includes mixing **polycarbonate** resin with stated amounts of **nanoclay** and **carboxylic acid**.

The claims stand rejected under 35 U.S.C. 102(e) as being anticipated by Ross et al U.S. Patent 6,610,770 (herein "Ross") with Bixler et al. U.S. Patent 5,178,730 (herein "Bixler").

Ross disclosed a **fire retardant** polymer composition that contains **clay** (modified with **quaternary ammonium compound)** and an **organic material**.

Bixler disclosed clay having presently relevant particle thickness and size

The law is clear on that "[t]he disclosure in an assertedly anticipating reference must be adequate to enable possession of the desired subject matter. It is insufficient to name or describe the desired subject matter, if it cannot be produced without undue experimentation." Elan Pharmaceuticals, Inc. v. Mayo Foundation for Medical Education and Research, 68 USPQ2d 1373 (CAFC 2003).

Set against the above standard, Ross clearly falls short of describing the claimed process for improving impact strength.

It will first be pointed out that nothing in Ross refers to impact performance or its improvement, much less to the impact performance of the claimed polycarbonate.

Although this Ross' shortcoming by and of itself militates against the alleged anticipation, Applicants call attention to the following:

(i) An **important** aspect of the referenced invention (column 5, line 44 et. seq) requires

"a reaction product obtained by the **intercalation and reaction** of (a) one or more smectite clays; (b) one or more quaternary ammonium compounds and/or (c) one or more organic materials".

These characteristics of Ross do not describe the claimed invention, since the presently claimed carboxylic acid neither react with quaternary ammonium compounds nor intercalate the claimed clay. Supporting evidence has been provided in the course of prosecution – see enclosed copies of a Declaration by Dr. Chung (dated May 3, 2006) and of a Declaration by Dr. Manias (dated May 1, 2006).

The Examiner failed to explain how or why the claimed invention is deemed by him to be anticipated notwithstanding the fact that its characteristics meet **none** of Ross' **important** criteria.

(ii) Examples of Ross' suitable **optional** organic material include (Ross column 8, lines 61 et seq.) carboxylic acids, sulfuric acids, sulfonic acids, alkyl sulfates, organophosphorus acids, phenols, thioacids and amino acids. Additionally suitable are other non-anionic materials described in U.S. Patent 6,380,295 (U.S. Patent Application Aerial Number 09/064216) and further include "any of a wide range of materials and can have a wide range of molecular weights and include (column 8, lines 60 et seq.) polyurethanes; polyamides; polyesters; polycarbonates; polyepoxides and polyolefins as well as polyethers (polymers and copolymers) based on ethylene oxide, butylene oxide, propylene oxide, phenols and bisphenols; polyesters (polymers and copolymers) based on aliphatic and aromatic diols and polyurethanes based on aliphatic and aromatic diisocyanates, polyamides (polymers and copolymers) based on aliphatic and aromatic diamines, and polycarbonates (polymers and copolymers) based on aliphatic or aromatic diols; polycarboimides (polymers and copolymers) based on tetrabasic acids and diamines, vinyl polymers and copolymers based on vinyl monomers, styrene and derivatives of styrene; acrylic polymers and copolymers based on acrylic monomers; copolymers based on

styrene, vinyl and acrylic monomers; polyolefin polymers and copolymers based on ethylene, propylene and other alphaolefin monomers; polymers and copolymers based on dienes, isobutylenes and the like; and copolymers based on dienes, styrene, acryl and vinyl monomers. Other organic materials can include monomeric materials that have the functionality of the materials described above.

The Ross document falls short of describing the claimed carboxylic acid; "Picking and choosing" among the large number of organic materials can not be viewed as meeting the required description.

(iii) Ross' flame-retardant composition entails a synthetic polymer selected from the list presented in column 5, lines 13-38. Here too, the reference burdens the reader with the task of picking and choosing. By picking and choosing, one can find all the limitations of a claimed invention, but Ross provides no direction let alone the "full, clear, concise and exact" directions required to carry out the claimed invention. When one has to pick and choose among a wide selection of variables to construct a claim, the subject matter of that claims has not been described as required by the statute; Ross demonstrated no possession of the present invention.

(iv) The inclusion of organic material in the compositional makeup of Ross' **flame retardant** composition is merely optional (column 8, line 47) whereas in the context of the inventive process for improving the impact performance, the inclusion of carboxylic is critical. Evidence in support of criticality in the context of the present invention has been included in the experimental section of the present application and is reproduced for convenience below:

Example	2	6	3	7
Polycarbonate, wt%	97.5	97.25	95	94.5
SALT-Modified Clay, wt%	2.5	2.5	5	5
Acid, wt%	--	0.25	--	0.5
Impact Performance				
Notched Izod, ft-lb/in	1	3	0.6	2
Unnotched Izod, ft-lb	57.1	No break	13.5	No Break
Multi-axial impact, ft-lb	27.6	46.1	2.3	40.7
Fracture mode	Shatter	Ductile	Brittle	Ductile

The above results show that compositions containing no acid (Examples 2 and 3) exhibit inferior impact performance in comparison to corresponding compositions that additionally contain the claimed acid (Examples 6 and 7).

Additional comparisons entailing different clay are presented below:

Example	4	5	8	9
Polycarbonate, wt%	97.5	95	97.25	94.5
SALT-modified Clay, wt%	2.5	5	2.5	5
Acid, wt%	--	--	0.25	0.5
Impact Performance				
Notched Izod, ft-lb/in	1.5	0.5	1.7	1.3
Unnotched Izod, ft-lb	64.1	13.4	No Break	No Break
Multi-axial impact, ft-lb	39.7	2	49	40.6
Fracture mode	Shatter	Brittle	Ductile	Ductile

The impact performance of Examples 4 and 5 that contain no acid are inferior to the examples that contain acid (Examples 8 and 9).

The Examiner failed to explain why or how the referenced **flame retardant** composition in which the relevant component is but **optional** anticipated the present invention in which the presence of a corresponding component is **critical** in the context of imparting improving **impact strength**.

(v) Examiner's assertion and conclusion that " The impact performance is inherent in the composition.... Applicants' claims are not novel" (Office Action, page 2 last line et seq) have been noted and are traversed.

Examiner's attention is directed to that inherency "may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." *In re* Schreiber, 44 USPQ2d 1429 (CAFC1997). Furthermore, in relying upon "inherency" it is Examiner's burden to provide "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art." *Ex parte* Tanksley, 37 USPQ2d 1382 (Bd. Pat. App. & Int'f 1994).

Examiner's assertion and conclusion referred to above are clearly erroneous and their retraction is urged.

Reconsideration and withdrawal of the stated rejection in light of the above is requested.

Believing the above represent a complete response to the Office Action and that the application is in condition for allowance, Applicants request the earliest issuance of an indication to this effect.

Respectfully submitted,

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